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42

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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7590		03/05/2004	EXAMINER	
Amy E. Rinaldo		AFTERGUT, JEFF H		
Kohn & Associates		ART UNIT		
30500 Northwestern Highway		PAPER NUMBER		
Suite 410		1733		
Farmington Hills, MI 48334		DATE MAILED: 03/05/2004		

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/494,837

Applicant(s)

MATHEW ET AL.

Examiner

Jeff H. Aftergut

Art Unit

1733

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 22-27 is/are pending in the application.
- 4a) Of the above claim(s) 27 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 22-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

Election/Restrictions

1. Newly submitted claim 27 is directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: Claim 27 appears to be directed to a different embodiment of hose assembly and process of forming the same wherein rather than providing a second fluoropolymer dispersion about the exterior of the braided hose assembly, one applied a surfactant about the exterior of the assembly subsequent to the braiding. It is not clear whether applicant has support in the original disclosure to claim this alternative embodiment (see the preliminary amendment and note that there is no description of application of the surfactant alone about the exterior of the braided assembly as a second coating and additionally note that the surfactant when applied alone was applied prior to application of the dispersion in a single dip method as described in the original disclosure). Any event, it is deemed that newly presented claim 27 relates to a different claimed invention (a hose with a single dispersion coating on the inside which was further dispersed through the braid with the aid of a second surfactant coating).

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claim 27 has been withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 102/103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Art Unit: 1733

3. Claims 22-26 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over E.P. 439,898.

At the outset, it should be pointed out that applicant's earliest afforded effective filing date for claim 22 is 2-23-93 (in Serial Number 08/023,417 the applicant first introduced the use of two dispersions wherein one applied a first dispersion to the tubing, braided over the same, and then applied a final dispersion over the same). E.P. '898 was printed 8-7-91 (more than a year before applicant's afforded effective filing date) and therefore the reference is available under 35 USC 102(b). The reference to E.P. '898 taught that one skilled in the art would have provided a hose with a braided glass fiber thereon. Prior to application of the glass fiber onto the tubing, the reference suggested that one skilled in the art would have applied fluoropolymeric dispersion onto the glass fibers employed in the braid. By performed this step, the finished tubing was provided with a dispersion 20 which completely coated and embedded the glass fiber braid 18 disposed about the extruded tubing 16. While the claims at hand recite two separate dispersion coating operation (one on the tubing followed by braiding and then an additional coating upon the braid) there is no reason to believe that the product produced by this process would have been any different from the product made by E.P. '898. The claims now recite that any gaps from the braided fibers were filled with the dispersion of the second coating, however, it is believed that the coating of the fibers prior to the braiding would have resulted in a finished assembly which had filled gaps between the braided fibers as Figures 2 of E.P. '898 clearly depicted the filling in of any gaps and column 4, lines 39-41 appears to suggest the same (compare Figure 2 of E.P. '898 with Figure 4 of this application, for example). Additionally, note that the coating to the braid would have provided one with filling of the gaps between the fibers

Art Unit: 1733

of the braid and such would have provided a mechanical locking of the fibers onto the inner hose. It should be noted that the applicant has the burden to show that the processing as claimed would have produced a materially different product. The Office is not able to produce products by the myriad of processes placed before it and make physical comparisons between the so produced products. While it is believed that the product of '898 anticipates the claimed invention, applicant is advised that the gist of the disclosed invention therein was to ensure that the braided fibers were completely embedded within the polymeric dispersion applied to the same and that the polymeric dispersion not only coated the exterior of the braid but made contact with the extruded hose as well, see column 1, line 50-column 2, line 2. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide additional coatings as deemed necessary in order to make sure that the braid was completely immersed within the fluoropolymer using the techniques of E.P. 439898.

With regard to claims 23 and 24, note that the dispersion employed in E.P. '898 was a fluoropolymeric dispersion and thus the product produced would have had the braid embedded within the fluoropolymer. Regarding claim 25, the reference suggested that surfactants would have been included within the dispersion, see column 4, lines 29-30. Regarding claim 26, the dispersion was cured (see for example column 7, lines 12-14). It is not clear whether the inclusion of a curing agent would have produced a materially different finished product or not. Additionally, the use of a curing agent in fluoropolymer dispersion is taken as conventional in the art.

Art Unit: 1733

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 22-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over E.P. 380,841 in view of any one of Arterburn, Busdiecker, Haren, Mathews, Gray et al, or Brumbach optionally further taken with Green.

E.P. '841 taught that it was known at the time the invention was made to form a fluorocarbon tubular core member and braid upon the same. The reference suggested that it was known to braid a glass fiber material about the fluorocarbon core and subsequent to such action to apply an outer fluorocarbon coating to the assembly. The reference suggested that those skilled in the art would have applied fluorocarbon dispersion onto the braided assembly. The applicant is more specifically referred to the abstract of the reference for example. The claimed product was made by a different process than that of E.P. '841, where the claims require that one initially apply dispersion to the tube prior to application of the braided layer which was then followed by a second application of dispersion to the assembly. The applicant has alleged that the use of the "two dip" method produced a materially different product from the single dip operation of E.P. '841. However, it was notoriously well known in the braiding art to apply a coating upon a tube prior to braiding followed by application of a second coating (which was the same as the first coating) in order to ensure complete encapsulation of the braided material within the coating material as evidenced by any one of Arterburn, Busdiecker, Haren, Mathews, Gray et al, or Brumbach.

Art Unit: 1733

More specifically, each one of Arterburn (adhesive latex adhesive layers 14, initially applied to the tube 12 prior to braid 16 and second adhesive latex layer 18, see additionally column 2, lines 67-column 3, line 14), Busdiecker (adhesive coating 13 initially applied to tube 10 prior to application of braid 17 followed by the application of adhesive coating 22 which may be of the same type of adhesive as 13), Haren (tube 11 initially coated with adhesive 13A prior to braiding layer 12A which was subsequently coated with another adhesive layer 45A, note that the application of the layer 45A ensured a complete bond in the finished tube), Mathews (two coats of adhesive 15 applied to the tube 10, one prior to braiding and one after braiding the material 14 in order to encapsulate the braid therein see column 5, lines 1-70), Gray et al (adhesive layers 14 and 18 applied to the tube 12 and the braid 16, respectively), or Brumbach (adhesive layer 15 applied to the tube 10 and adhesive layer 17 applied to the braided material 14 after the braiding operation) suggest that it was known at the time the invention was made to apply two coating of adhesive when manufacturing a braided tube wherein an initial coating was applied to the tube , the coated tube was then braided, and then the assembly was coated again with an adhesive. Such would have ensured a greater bond between the braid and the tube and ensuring complete encapsulation of the braided fibers about the tube. It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the techniques of any one of Arterburn, Busdiecker, Haren, Mathews, Gray et al, or Brumbach to make a braided reinforced tube from fluoropolymer of E.P. 380,841 wherein the two coatings of the dispersion (one on the tube prior to braiding and one on the tube after the braiding) would have ensured a good bond between the braid and the tube and completely encapsulated the braided material.

Art Unit: 1733

With regard to the various dependent claims, the applicant is advised that the reference to E.P. '841 suggested that it was known to apply a dispersion of fluoropolymer. Additionally the incorporation of curing agent and surfactant in a fluorocarbon dispersion are taken as known and conventional in the art.

While it is believed that the references as set forth above suggested that it was known to apply a dispersion onto the above noted tube prior to the application of the braiding, to further evidence the same the reference to Green is cited. Green taught that it was known at the time the invention was made to apply a dispersion onto the tube prior to braiding about the same when making a reinforced ptfe tube. Note that the reference suggested that the processing would have resulted in a strong bond between the tube and the braiding disposed thereon. It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the techniques of any one of Arterburn, Busdiecker, Haren, Mathews, Gray et al, or Brumbach where one applied two coatings of dispersion in the manufacture of a reinforced fluorocarbon tube wherein one dispersion adhesive coating was applied to the tube prior to braiding as suggested by Green as well as after the braiding operation as suggested by E.P. '841.

It should be noted that with a proper statement that the inventions of this application and Green were commonly owned at the time the inventions were made one might be able to remove Green as a prior art reference under 102(e) as the filing date of this application is now after November of 2000.

Response to Arguments

6. Applicant's arguments filed 1-7-04 have been fully considered but they are not persuasive.

Art Unit: 1733

At the outset, it should be noted that applicant has amended claim 22 to remove that the hose assembly is a "flexible hose assembly", thereby removing the 112, first paragraph rejection. Applicant's arguments that the preliminary amendment of 1-31-2000 provided support for the same are therefore moot. It is worth noting that a review of the language added in the preliminary amendment which was filed with the application does not express that the hose was a "flexible hose" after assembled together.

The applicant argues that the two coat method produced a different product from that of E.P. '898 as the final product of E.P. '898 would have had gaps therein and did not address whether all gaps were filled in the operation after the braiding process. This has not been found persuasive.

The applicant is advised that as depicted and described in E.P. '898 the fibers of the braid were completely encapsulated within the dispersion of the ptfe. It is agreed that the reference does not expressly state that one skilled in the art would have filled voids or gaps in the braid, but the reason that the reference does not express the same is that there are no gaps between the fibers. The fibers themselves were completely encapsulated within the dispersion when one applied the braiding to the ptfe tubing. The result is the coating 20 is disbursed throughout the braiding. Compare coating 20 of E.P. '898 and coating 14 of this application. The applicant is additionally advised that the coating of the fibers prior to the braiding resulted in an improved assembly of the braid to the tubing wherein the braiding was better adhered to the tubing as discussed by E.P. '898. The applicant has the burden to show that the claimed article of manufacture is materially different from that of E.P. '898 and the evidence provided thus far has fallen short of meeting this burden. Namely, applicant has compared a single dip method to a

Art Unit: 1733

double dip method and the resulting products, but applicant has failed to make a comparison between a coated fibers which was then braided about a core to the double dip method.

While it is true that the reference to E.P. '898 does not expressly address the "gap" issue of the claims, there is every reason to believe that the coating provided to the fibers prior to the braiding would have filled any gap between the fibers of the braided assembly. This is because the coating applied 20 was a coating which as depicted and described completely encapsulated the fibers of the braid. In order to do the same, all gaps between the fibers would have been understood to have been filled.

The applicant argues that the benefit of the hose formed via the process of E.P. '898 wherein the fibers were coated with the dispersion prior to the braiding operation was that the fiber had greater strength and that the "double dip" method had the advantage of greater bond strength between the braid layer and the inner liner. This is not well taken, in that there is no evidence of record which suggested that the "double dip" method of the claims achieved superior bond strength to that of E.P. '898. Additionally, the reference to E.P. '898 clearly suggested that a very good bond was developed between the braid and the inner liner using the techniques of manufacture described therein, see column 1, line 50-column 2, line 1, column 2, lines 15-20, column 4, lines 41-45, column 5, lines 22-27. The applicant is advised that it is not clear where applicant has determined from E.P. '898 that the coating of the individual fibers with the dispersion prior to the braiding of the same would have made the "fiber have greater strength". In fact the reference to E.P. '898 appeared to suggest that the coating operation performed prior to the braiding operation would have resulted in a stronger bond between the fiber and the inner liner.

Art Unit: 1733

The applicant also asserts that the product is different because in E.P. '898 the fibers form the anchor points with the inner liner while in the claimed invention it is the coating of the second dispersion which filled the gap which formed the anchor points of the braid to the inner liner (i.e. the filled gaps are the anchor points). Applicant argues that the use of the fiber as an anchor point would have resulted in a hose which was too rigid and subjected to kinking which was a known problem of one manufacturer who employed the fiber coating and braiding technique of E.P. '898. This has not been found persuasive because as identified in the original disclosure at page 2, lines 28-33, page 11, line 27-page 12, line 6, and page 65, lines 17-20, the kinking of the hoses which included a non-metallic braid thereabout was a function of the "relative longitudinal movement between the inner tubular member and the braided layer" and this "relative slippage between the inner tubular member and the braided layer" made the hose assembly "susceptible to kinking". Clearly, then, it was the lack of a good bond between the braided layer and the inner liner which resulted in the kinking of the hose. As noted above, the reference to E.P. '898 achieved a good bond between the hose inner liner and the braid (along all of the anchor points as noted by applicant), and thus one skilled in the art would not have expected to have a kinking problem with the E.P. '898 hose. The applicant asserts that the problem existed without any evidence (but rather reached a conclusion of the same without providing any evidence of the same). As a result, it is believed that evidence of the kinking problem identified should be submitted which showed that the anchoring of the fibers would have resulted in a kinking problem (as the original disclosure appears to dispute such a showing and the original disclosure was signed in the form of a declaration).

Art Unit: 1733

The applicant argues the unexpected benefits of the single dip method over the double dip method as identified in the earlier presented declaration. However, as previously noted, the reference to E.P. '898 is not practicing the single dip method and expressly suggested therein that the single dip method did not achieve as good of a bond as the method proposed therein where the fibers were coated prior to braiding. As such the applicant has not compared the closest prior art to the claimed invention.

Regarding the rejection under 35 USC 103 over EP '841 and any one of Arterburn, Busdiecker, Haren, Mathews, Gray et al, or Brumbach optionally further taken with Green, the applicant is advised that the claims at hand do not exclude the application of additional layers upon the adhesive coated tubing. In other words, while the references to any one of Arterburn, Busdiecker, Haren, Mathews, Gray et al, or Brumbach suggested that those skilled in the art might well have incorporated a second adhesive coating onto the braid in order to allow for the application of a second braid layer (note that Mathews appears not to provide a second braiding layer onto the first applied braiding), the claims have not excluded the application of the second braiding material on the hose inner liner and thus the claims are not commensurate in scope with the arguments.

The applicant argues that Green taught the application of the dispersion onto the liner prior to the braiding and that this was precisely what was taught by the prior art in the "single dip" methods. However the reference to E.P. '841 taught the application of the dispersion about the braided inner liner after application of the braiding (note that any one Arterburn, Busdiecker, Haren, Mathews, Gray et al, or Brumbach suggested that one would have applied an adhesive layer prior to braiding thereon). Green was cited to show that in the art of ptfe tubing it was

Art Unit: 1733

known per se to apply the dispersion upon the inner liner prior to braiding. Clearly, one viewing the prior art as a whole would have understood from Green and E.P. '841 that those skilled in the art knew in the manufacture of ptfc tubing reinforced with a braid to apply the dispersion both before braiding and after braiding and that in the art of braiding about an inner liner it was known per se to provide both coating as envisioned by any one of Arterburn, Busdiecker, Haren, Mathews, Gray et al, or Brumbach. The claims remain rejected under 35 USC 103 for the same reasons previously presented.

It should be noted that applicant has failed to provide a clear comparison between the coated fiber and braided tube of E.P. 439,898 and the two dip method for producing the tubes herein wherein the "unexpected benefit" of the reduction in kinking could be clearly determined via the comparison.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff H. Aftergut whose telephone number is 571-272-1212. The examiner can normally be reached on Monday-Friday 7:15-345 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on 571-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1733

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Jeff M. Aftergut
Primary Examiner
Art Unit 1733

JHA
March 1, 2004